

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A device for mounting and dismounting tires of wheels positioned on a wheel support of a tire changing machine, in which tool groups are supported and actuated by tool-bearing arms arranged above and below the wheel support and being vertically translatable with respect to lateral columns for anchoring and support, wherein,

at least one of the tool groups comprises at least an extractor first tool comprising a cylindrical stem having a first lower curved end and a second upper end,

the second upper end connected to an actuator mechanism to rotate the stem,

~~which~~ the cylindrical stem is housed rotatably in a support seating,

the support seating constrained to one of the tool-bearing arms, and

the second upper end of the cylindrical stem is actuated by the actuator mechanism in order to rotate the stem and introduce the ~~[[curve]]~~ curved end between a rim and a tire, ~~another end of the stem being connected to an actuator for rotating the stem.~~

2. (original) The device of claim 1, wherein a rotation of the stem is made over an angle which is sufficient to bring the curved edge, once inserted between rim and tire, into a hooking position with a bead of the tire.

3. (original) The device of claim 2, wherein an axis of rotation of the stem of the extractor first tool is arranged in a skewed position with respect to an axis of rotation of the wheel.

4. (currently amended) ~~[[The]]~~ A device of claim 1 for mounting and dismounting tires of wheels positioned on a wheel support of a tire changing machine, in which tool groups are supported and actuated by tool-bearing arms arranged above and below the wheel support and being vertically translatable with respect to lateral columns for anchoring and support, wherein at least one of the tool groups comprises at least an extractor first tool comprising a cylindrical stem having a curved end which cylindrical stem is housed rotatably in a support seating constrained to one of the tool-bearing arms and is actuated in order to introduce the curved end between a rim and a tire, another end of the stem being connected to an actuator for rotating the stem, wherein at least one of the tool groups comprises a second tool comprising a lever with an appendix at an

end thereof, which appendix is curved towards an outside of the wheel, and which is provided with a rectangular first portion destined to engage with the bead during a mounting operation, and a circular second portion which is coplanar to the rectangular first portion and destined to push the bead towards an inside area of the rim while the tire is rotated by the wheel support.

5. (previously presented) The device of claim 1, wherein the wheel support is provided with a self-centring blocking device of the rim, a positioning thereof being automatically obtained according to a diameter of the wheel, the tool-bearing arms arranged below and above the wheel support being radially aligned with respect to the self-centring device.

6. (previously presented) The device of claim 1, wherein the tool-bearing arm arranged below the wheel support supports an upwards-directed L-shaped tool having an upper end which is slightly curved towards an outside of the wheel, the L-shaped tool being translated parallel to an axis of the wheel in proximity of an edge of the rim.

7. (original) The device of claim 6, wherein the L-shaped tool is used to push the tire upwards while rotating, so that a dismounting operation thereof from the rim is completed after extraction of the upper bead, the L-shaped tool being

used in a mounting operation of a lower bead of the tire internally of the rim, by hooking the lower bead with the curved upper end and displacing the lower bead downwards while the wheel support is rotated.

8. (previously presented) The device of claim 2, wherein at least one of the tool groups comprises a second tool comprising a lever with an appendix at an end thereof, which appendix is curved towards an outside of the wheel, and which is provided with a rectangular first portion destined to engage with the bead during a mounting operation, and a circular second portion which is coplanar to the rectangular first portion and destined to push the bead towards an inside area of the rim while the tire is rotated by the wheel support.

9. (previously presented) The device of claim 3, wherein at least one of the tool groups comprises a second tool comprising a lever with an appendix at an end thereof, which appendix is curved towards an outside of the wheel, and which is provided with a rectangular first portion destined to engage with the bead during a mounting operation, and a circular second portion which is coplanar to the rectangular first portion and destined to push the bead towards an inside area of the rim while the tire is rotated by the wheel support.

10. (previously presented) The device of claim 2, wherein the wheel support is provided with a self-centring blocking device of the rim, a positioning thereof being automatically obtained according to a diameter of the wheel, the tool-bearing arms arranged below and above the wheel support being radially aligned with respect to the self-centring device.

11. (previously presented) The device of claim 3, wherein the wheel support is provided with a self-centring blocking device of the rim, a positioning thereof being automatically obtained according to a diameter of the wheel, the tool-bearing arms arranged below and above the wheel support being radially aligned with respect to the self-centring device.

12. (previously presented) The device of claim 4, wherein the wheel support is provided with a self-centring blocking device of the rim, a positioning thereof being automatically obtained according to a diameter of the wheel, the tool-bearing arms arranged below and above the wheel support being radially aligned with respect to the self-centring device.

13. (previously presented) The device of claim 2, wherein the tool-bearing arm arranged below the wheel support supports an upwards-directed L-shaped tool having an upper end which is slightly curved towards an outside of the wheel, the L-

shaped tool being translated parallel to an axis of the wheel in proximity of an edge of the rim.

14. (previously presented) The device of claim 3, wherein the tool-bearing arm arranged below the wheel support supports an upwards-directed L-shaped tool having an upper end which is slightly curved towards an outside of the wheel, the L-shaped tool being translated parallel to an axis of the wheel in proximity of an edge of the rim.

15. (previously presented) The device of claim 4, wherein the tool-bearing arm arranged below the wheel support supports an upwards-directed L-shaped tool having an upper end which is slightly curved towards an outside of the wheel, the L-shaped tool being translated parallel to an axis of the wheel in proximity of an edge of the rim.

16. (previously presented) The device of claim 5, wherein the tool-bearing arm arranged below the wheel support supports an upwards-directed L-shaped tool having an upper end which is slightly curved towards an outside of the wheel, the L-shaped tool being translated parallel to an axis of the wheel in proximity of an edge of the rim.

17. (new) A device for mounting and dismounting tires of wheels positioned on a wheel support of a tire changing machine, comprising:

a wheel support;

a tool-bearing arm with a pivot;

a column supporting the arm so that the arm is vertically translatable with respect to the column;

a support seating anchored at a free end of the pivot of the arm;

an actuator for rotating the stem; and

a first extractor tool comprising a cylindrical stem housed, freely rotatable, in the support seating,

the cylindrical stem having a first curved end and a second upper end connected to the actuator,

the actuator actuating the stem to rotate the stem within the support seating and thereby introduce the first curved end between a rim and a tire.

18. (new) The device of claim 17, wherein,

the stem is actuated between a first position with the curved end tangentially to the wheel rim and a second position with the curved end perpendicular to the wheel rim, in a hooking configuration on the bead of the tire.

19. (new) The device of claim 17, further comprising a second tool comprising a lever with i) an appendix at an end thereof curved towards an outside of the wheel, ii) a rectangular first portion destined to engage with the bead during a mounting operation, and iii) a circular second portion which is coplanar to the rectangular first portion and destined to push the bead towards an inside area of the rim while the tire is rotated by the wheel support.

20. (new) The device of claim 18, wherein,
an axis of the first extractor tool is inclined with respect to the wheel axis and the first extractor tool is free of a plane passing through the wheel axis,

the actuator comprises a con rod mechanism,

the second upper end of the stem is connected to the con rod mechanism, and

the pivot is arranged internally of the arm.